ASN LEADING THE FIGHT AGAINST KIDNEY DISEASE

KidneyNews

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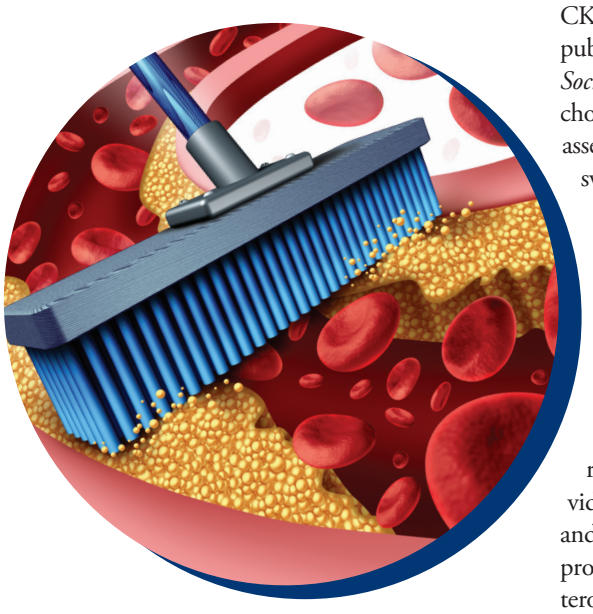
For the Most Part, Patients with Chronic Kidney Disease Should Take Statins, Guidelines Agree



Although numerous studies have shown that chronic kidney disease (CKD) is linked with an increased risk for atherosclerotic cardiovascular disease, should all patients with CKD be taking statins? A new study published in the *Journal of the American Society of Nephrology* compares different cholesterol management guidelines and assesses the utility of risk equations to answer this question.

In 2013, two cholesterol management guidelines were published: one by the American College of Cardiology/American Heart Association (ACC/AHA) and another by the Kidney Disease Improving Global Outcomes Lipid Work Group (KDIGO). The ACC/AHA guideline recommends statin treatment for individuals with a high risk of heart disease and stroke based on a history of heart problems, diabetes, or very high cholesterol, or for those with an estimated 10-year risk of 7.5 percent or more according to a formula called the Pooled Cohorts risk equations. By contrast, the KDIGO guideline recommends statin therapy for all individuals 50 to 79 years of age with CKD.

"Although individuals with CKD are in general more likely to develop cardiovascular disease than individuals without CKD, those considered at low risk by the ACC/AHA cholesterol treatment guideline may actually have low risk and therefore may unnecessarily be recommended statin treatment by the KDIGO guideline," explained Paul Muntner, PhD, of the University of Alabama at Birmingham School of Public Health. "In contrast, if these individuals do have high risk for cardiovascular disease, following the ACC/AHA cholesterol treatment guideline may result in an excessive number of cases that could be prevented." Therefore, Muntner and his team, including lead investigator Lisandro Colantonio, MD, MSc, thought that it was important to understand how the two cholesterol treatment recommendations are similar and different.

The researchers compared the two guidelines using data from the Reasons for Geographic and Racial Differences in

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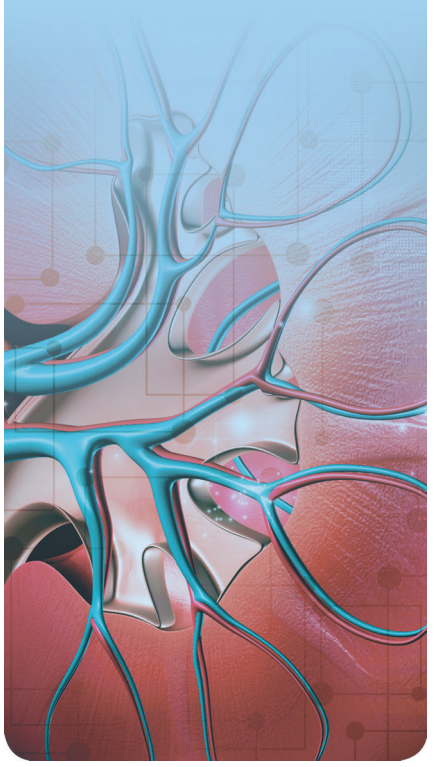

Kidney Watch 2015

Research Aims to Aid Nephrology Workforce Planning

ASN Forms Nephrology Match Task Force

By Kurtis Pivert

Insights from recent research into the nephrology workforce will inform discussions about nephrology's future in 2015. Researchers from George Washington University (GWU) will continue their collaboration with the American Society of Nephrology (ASN) and expand upon their initial nephrology workforce research. Discussion of workforce trends and developments in the specialty is timely and has become more urgent after results of the Match for appointment year (AY) 2015–2016 were released on December 3, 2014.

Nephrology workforce trends

In February 2014, ASN Council approved 50 initiatives to increase interest in nephrology careers among medical students and residents. Included was an analysis of the current nephrology workforce and job market for recent graduates.

ASN contracted with a research team led by Edward Salsberg, MPA, and principal investigator Leah Masselink, PhD. A pioneer in the field of health workforce research, Salsberg worked at the Associa-

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Richard Lafayette Appointed Editor-in-Chief of *ASN Kidney News*

With this issue of *ASN Kidney News*, the American Society of Nephrology is pleased to announce the appointment of a new Editor-in-Chief: Richard Lafayette, MD, FACP. Dr. Lafayette succeeds *Kidney News's* inaugural Editor-in-Chief Pascale Lane, MD, who guided the magazine in becoming an authoritative source for information and analysis of trends affecting all those who work in the kidney sphere over the past six years since its creation in 2008.

Dr. Lafayette is Associate Professor of Medicine (Nephrology) and Director of the Stanford Glomerular Disease Center at Stanford University Medical Center in Stanford, CA. His 25-year career in nephrology spans general nephrology, transplant nephrology, and focuses on glomerular disease. During this time he has served as Senior Associate Chair of Medicine for six years and Clinical Chief of Nephrology for more than a decade. Dr. Lafayette was a member of the first *Kidney News* Editorial Board and is a member of the ASN Glomerular Diseases Advisory Group.

"I am thrilled to have this opportunity to contribute to and continue to shape *Kidney News* at this critical and exciting time for nephrology," Dr. Lafayette said. "I want to build on *Kidney News's* reputation as the prime source for news for the kidney community while conveying optimism and hope for a wonderfully fruitful future for our field. I foresee *Kidney News* being a shared, valued resource for communication for ASN and the entire kidney community."

ASN Kidney News serves a wide variety of stakeholders in the kidney community, including patients, health care providers, legislators, and regulators.

Statins

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Stroke (REGARDS) study, a large study of more than 30,000 adults in the United States. Their analysis included 4726 participants who were aged 50 to 79.9 years and had an estimated GFR below 60 mL/min per 1.73 m^2 or albuminuria above 30 mg/g but were not treated with dialysis.

The team found that 92 percent of people with CKD are recommended to receive statin treatment by the ACC/AHA guideline versus 100 percent according to the KDIGO guideline. This indicates that although the guidelines use very different methods for estimating future vascular risk, concordance between the two is extremely high.

The investigators also found that 50 percent of people with CKD who are recommended to receive statins are not taking them. Finally, the new Pooled Cohort risk equations were accurate among people with CKD, indicating that physicians have a valid tool available to estimate heart disease risk for their patients with CKD.

"These results indicate that either guideline can be used to inform the decision to initiate statin therapy for people with CKD who are 50 to 79 years of age," said Colantonio. "They also show that there is an unmet treatment need and a missed opportunity for lowering heart disease risk among patients with CKD."

Sankar Navaneethan, MD, MS, MPH, who is a nephrologist at the Cleveland Clinic and was not involved with the research, noted that Medicare data also show that statins are underutilized in the CKD population (http://www.usrds.org/2013/pdf/v1_ch5_13.pdf). "While there are some differences amongst the guidelines, it is reassuring to see that irrespective of whichever guidelines practitioners will choose to follow, most CKD patients will qualify for prescription of statins," he said. "Non–dialysis-dependent CKD patients have heightened vascular risk, and clinical trials have shown the beneficial effects of statins in this population. We hope statin use will increase and would translate into survival benefits for this high-risk population in the future."

According to Colantonio and her colleagues, follow-up of REGARDS participants is currently ongoing, and data for this analysis were available only to calculate observed risk for atherosclerotic cardiovascular disease at 5 years. Also, the REGARDS study does not have active surveillance to detect atherosclerotic cardiovascular disease events that may not have been reported by participants or their next of kin. This could have led to an underestimation of the actual number of events in this cohort.

In an accompanying editorial, Marcello Tonelli, MD, of the University of Calgary in Canada, noted that although the two guidelines reach very similar conclusions, the KDIGO guideline is substantially less complex to use. "Population-based, risk-driven strategies aimed at preventing vascular events will be a key method for reducing death and disability, but only if they are simple enough for clinicians to rapidly apply at the bedside," he wrote. "The findings of Colantonio and colleagues suggest that the KDIGO guideline is more likely to achieve this goal for CKD patients than the ACC/AHA guideline." He also pointed out that although the KDIGO recommendations for CKD patients younger than 50 years who are not receiving dialysis are more complex than for those who are older, they are still less complex than the ACC/AHA recommendations.

Tonelli also provided a broader view of statins as an important method for reducing the global burden of noncommunicable chronic diseases, along with interruption of the renin/angiotensin system, healthy diet and exercise, smoking cessation, and control of blood pressure, blood sugar, and body weight.

The article, entitled "Contrasting Cholesterol Management Guidelines for Adults with CKD," is available online at http://jasn.asnjournals.org/content/early/2014/11/12/ASN.2014040400.abstract.

Study coauthors include Usman Baber, MD, Maciej Banach, MD, PhD, Rikki Tanner, MPH, David Warnock, MD, Orlando Gutiérrez, MD, Monika Safford, MD, Christoph Wanner, MD, and George Howard, DrPH.

Disclosures: Drs. David Warnock, Monika Safford, and Paul Muntner have received grant support from Amgen Inc. Dr. Lisandro Colantonio was funded with a Fulbright Scholarship to complete the PhD program in epidemiology from the University of Alabama at Birmingham.

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Kidney Watch 2015

The Future of the Sustainable Growth Rate: A Pay-For Story

By Mark Lukaszewski

In 2014, Congress made major gains toward finally repealing the broken sustainable growth rate (SGR). But, as of press time, Congress had failed to get legislation to repeal SGR over the line, meaning that physicians will again face pay cuts—and the hope of repeal—in 2015.

What is SGR?

In an attempt to control Medicare spending on physicians' fees, Congress enacted the SGR formula in 1997. Although it has called for dramatic reductions in payments over the past decade, each year Congress has temporarily overridden the cuts and kept the SGR in place. According to the formula, if no changes are made, physicians' fees are set to be reduced by 21.2 percent on March 31, 2015, which would have a devastating, irrevocable effect on the Medicare system.

Is Congress the problem?

It would be natural to assume that the usual health care political games and congressional hold-ups that we have seen in the past are responsible for preventing SGR reform, but for once that assumption would be wrong. Legislation to replace SGR gained tremendous bipartisan, bicameral support in the House and the Senate in this past congressional session. With agreement on both sides of the aisle that the SGR needs to go, and with consensus on legislation to accomplish that goal, why are we still stuck with the current SGR?

Where is the issue?

The answer is the up-front cost of replacing the SGR. The Congressional Budget Office, which is responsible for providing Congress with cost estimates for legislation, indicated that repealing SGR would cost roughly $150 billion. Therefore, offsets are needed to defray the cost of permanently replacing the SGR. For a replacement to be put into place, Congress has to either cut money from other programs or come up with a new funding source.

Future of SGR in the 114th Congress

With such a big price tag and few ideas for pay-fors, SGR legislation is highly unlikely to pass in 2015. Given the recent election results, the question is whether the upcoming Republican-controlled Congress can find a suitable pay-for to accomplish comprehensive SGR repeal legislation. It is almost certain that *something* will be

on the chopping block to cover the cost of the legislation. However, if the only pay-for Congress offers is defunding the Affordable Care Act (Obamacare), the bill has little to no chance of becoming law, and it would be vetoed as soon as it hits the president's desk.

The American Society of Nephrology (ASN) believes that repealing SGR is not a partisan issue and will continue to work in 2015 with the relevant congressional committees and the broader medical community to build on the gains made. Stay tuned to *ASN Kidney News* and to e-mail communications from ASN to learn how you can get involved in advocating for SGR replacement.

Disparities in Kidney Care: Geography, Race, and Perceived Racial Discrimination Will Garner Continued Attention

Patients' access to specialized care before kidney failure develops varies significantly across the United States and among different racial groups. And perceived racial discrimination may have negative effects on kidney function.

Pre-ESRD nephrology care is crucial for optimizing the health of patients with this condition. How the United States and global kidney community ensure such care for the millions of people with kidney disease is crucial to stemming the disease's growing prevalence.

One approach is to look at the adequacy of care patients receive in different parts of the country and then examine the reasons for discrepancies in care.

Brendan Lovasik of the Emory University School of Medicine and his colleagues are taking this approach. They recently looked to see whether patients across the country are receiving adequate access to kidney care.

Using a comprehensive national data set and advanced statistical modeling techniques, the researchers identified several geographic areas in the United States with significantly low rates of pre-ESRD kidney care. Dialysis facilities in the lowest quintile of pre-ESRD nephrology care were geographically clustered in several distinct areas, including San Francisco, Los Angeles, Chicago, Miami, and Baltimore, and along the corridors of the Mississippi and Ohio Rivers. Also, facilities in the lowest quintile of pre-ESRD nephrology care were 1.88 times more likely to be located in inner cities compared with those in the highest quintile. The lowest quintile facilities were 1.96 times more likely to be in high-poverty neighborhoods. The proportion of racial minorities within a neighborhood was not associated with pre-ESRD kidney care rates.

"Improved outcomes among the chronic kidney disease population depend on earlier identification of patients with kidney disease who may require ESRD treatment, as well as greater awareness of patient morbidity and mortality, quality of life, and the financial benefits of kidney transplantation over dialysis," said Lovasik. "Our findings may help policy makers target low–pre-ESRD facilities and regions to improve access to specialty care with interventions and specific pilot programs aimed at improving patient outcomes."

In another recent study, Guofen Yan, PhD, of the University of Virginia, and her team looked at county-level disparities in pre-ESRD care. Their analysis of black–white comparisons included 1270 counties that had 5 or more patients of each race, resulting in 346,368 patients. Their Hispanic–white analysis included 613 counties with five or more patients of each race, resulting in 224,286 patients.

The researchers found that although disparities were more likely in certain geographic areas, they existed in diverse locations and in most counties of the United States. The overall percentage of patients who received care from a nephrologist at least 12 months before ESRD was lowest in Hispanics (20.0 percent), intermediate in blacks (23.8 percent), and highest in whites (30.0 percent). Black patients' likelihood of receiving care from a nephrologist was 10 percent to 54 percent lower than that of whites in approximately two-thirds of the counties. Hispanic patients' likelihood of receiving a nephrologist's care was 10 percent to 48 percent lower than that of whites in nearly all of the counties. Counties with larger disparities tended to be of lower socioeconomic status and to have fewer health care resources, and they were more likely to be located in the

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Disparities in Kidney Care

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South and within large metropolitan areas. "Our findings indicate that efforts to improve pre-ESRD care should be implemented nationally rather than regionally," said Yan.

Psychosocial stressors and their role in progression of kidney disease will also garner more attention in 2015.

Recent research is already leading the way.

To look at the relationship between perceived racial discrimination and kidney function decline, researchers led by Deidra Crews, MD, FASN, of Johns Hopkins University School of Medicine, studied a biracial urban population of adults with preserved kidney function in Baltimore, MD. The team assessed whether perceived racial discrimination, as measured through an adaptation of the Experience of Racial Discrimination questionnaire, was associated with kidney function decline over five years of follow-up in the Healthy Aging in Neighborhoods of Diversity across the Life Span study. A total of 1574 participants (630 whites and 944 African Americans) aged 30 to 64 years at baseline were included.

Twenty percent of individuals in the study perceived themselves to have been discriminated against "a lot" because of their race. Such individuals were more likely to be African American and to have a higher educational background, but they were more likely to be living in poverty than those who reported little to no perceived discrimination. Additionally, those who perceived "a lot" of discrimination had higher systolic blood pressure but a lower prevalence of diabetes than did those perceiving little to no discrimination.

Perceived racial discrimination—regardless of sociodemographic, lifestyle, and health factors—was linked with greater kidney function decline over five years of follow-up. When analyzed by race and sex, the link between perceived racial discrimination and kidney function decline remained only among African American women. Systolic blood pressure was responsible for 15 percent of this association.

"Perceived racial discrimination may contribute to disparities in kidney disease and might exert its effect on risk of kidney function decline through stress-related pathways," said Crews. "This study can serve as a basis for future studies focusing on psychosocial stressors and their potential contributions to the initiation and progression of kidney disease."

The two studies were presented at Kidney Week 2014.

Studies

Geographic Determinants of Low Pre-ESRD Nephrology Care in the United States (Abstract SA-PO849).

Racial and Ethnic Differences in Pre-ESRD Care in U.S. Counties (Abstract SA-PO857).

Association of Perceived Racial Discrimination and Kidney Function Decline among African Americans and Whites (Abstract SA-PO856).

Disclosure information is available at http://www.asn-online.org/education/kidneyweek/2014/program-faculty.aspx.

Prospects for NIH and Kidney Research Funding in the New Congress

By Grant Olan

The dust is still settling from the election of November 4, 2014, when Republicans gained control of both chambers of Congress. Whether a Republican Congress and a Democratic administration can work together to address the many domestic and foreign challenges confronting the country today is one of the biggest questions as we head into 2015.

One thing most Democrats and Republicans agree on, though, is that medical research is one of the smartest investments the United States can make. Funding for the National Institutes of Health (NIH), the global leader in medical research, creates jobs, drives the economy, and most importantly leads to new discoveries that improve patient care. Unfortunately, sustained budget cuts since 2010 are jeopardizing this country's research enterprise.

Despite the general support for medical research among Republicans and Democrats, their hands are tied by the Budget Control Act of 2011 and the Bipartisan Budget Act of 2013, which imposed strict budget caps as part of efforts to curb the federal deficit and debt. Unless Congress raises the caps or rescinds those laws—and given the makeup of the new Congress that starts on January 3, 2015, it is hard to imagine a scenario for that happening—then additional funding for the NIH would come at the cost of funding for other federal programs.

Moreover, the United States is projected to hit the debt ceiling (the total amount of debt this country can accumulate) again in April 2015, further complicating efforts to increase federal spending. Republicans will likely call for more budget cuts in exchange for raising the debt ceiling. Despite the challenging times, some bold leaders have come forward to call for doubling the NIH's budget.

Sen. Roy Blunt (R-MO) recently announced that it is one of his priorities. In October 2013, Sen. Elizabeth Warren (D-MA) said that those who say we cannot afford to double investments for the NIH ". . . are wrong. Research creates economic growth. It reduces health care costs. It creates a better life for our people. And yet, the success rate for NIH grants has dropped by nearly 50 percent over the past 10 years. That makes no sense. There is good work to be done—work to save lives and work to boost our economy. We cannot afford not to increase our investments in medical research."

The American Society of Nephrology (ASN) applauds the leadership of Senators Blunt and Warren and will work with them and the new majority in the Senate to advance funding for the NIH and other research agencies in 2015. The society will also continue working with the research community to implement the society's aggressive new Research Strategic Plan to bolster support for more kidney research funding.

Two research efforts that ASN supports and helped to shape are making their way through Congress: a comprehensive kidney care bill advanced by Kidney Care Partners—a broad coalition of the kidney community, including ASN, dedicated to advancing patient care—and the 21st Century Cures initiative to identify steps for accelerating the pace of cures and medical breakthroughs in the United States.

Stay tuned: the ASN will need your help calling on Congress to urge support for research funding during the spring budget season.

ESRD Seamless Care Organizations: Debuting Soon

By Rachel Meyer

Nearly two years after the Centers for Medicare and Medicaid Innovation (CMMI) announced the first-ever disease-specific innovation model, the first performance period of the ESRD Seamless Care Organizations (ESCO) program is slated to begin in January 2015. Large Dialysis Organization (LDO)-based ESCOs will be the first to participate in the program, followed by ESCOs operated by Small Dialysis Organizations (SDOs) in July 2015. Speaking at a meeting of the Council of Medical Subspecialty Societies in late November 2014, CMMI Seamless Care Models Group Director Hoangmai Phan, MD, confirmed the early 2015 launch date.

But as 2014 wound to a close, unanswered questions about the program remained—even after two major CMMI overhauls to the design and operation of the program as well as several delays in the program start date. As of press time, CMMI had not yet finalized the quality measures upon which the dialysis providers and nephrology practices that join together will be judged. CMMI engaged a contractor to convene a technical expert panel (TEP) to select quality measures, but to date contractor IMPAQ states that "CMS is conducting further research on the feasibility, usability, and technical considerations of the following proposed draft measurement set" TEP developed.

Because CMMI has been adamant that the ESCO program goes beyond kidney care to providing comprehensive care, it is highly likely that quality measures will expand beyond familiar quality improvement metrics. However, it remains to be seen whether the measures selected will have been tested and verified in the ESRD patient population—and whether the performance criteria will reflect the unique ESRD patient population.

The Innovation Center has been tight-lipped regarding how many applications it received for the ESCO program, but rumors suggest that approximately 15 LDO ESCO applications were submitted. CMMI convened two reviewer panels to assess applications, one in July for LDO ESCOs and one in September for SDO ESCOs, but it has not released any public information about the panels or next steps for the applicants. Of course, CMMI approval of an application does not bind the applicants to launching an ESCO, so these numbers may not accurately reflect the program's chances of success. Much will depend on how CMMI decides on some of the program's yet-unanswered questions.

The year 2015 will be the proving ground for this new program, which will likely also set the tone for future disease-specific innovation models.

Nephrology Workforce Research

Continued from page 1

tion of American Medical Colleges and Health Resources and Services Administration. He also helped establish the University at Albany's Center for Health Workforce Studies before joining GWU.

"The goal of our research is not to find 'the answer' but to provide the nephrology community with better data and information so that they can make better, more informed decisions," Salsberg told *ASN Kidney News.*

He noted that one of greatest challenges for nephrology—as well as workforce planners—is an evolving delivery system. "This reflects the organized efforts to change the delivery system, such as through reimbursement changes to control costs and increase value, as well as the development of new interventions and staffing mixes," Salsberg said. "This makes it very difficult to project future needs."

The initial report, *The US Nephrology Workforce: Developments and Trends*, was published in advance of ASN Kidney Week 2014. The analysis of the current state of nephrology prompted discussion and debate at the meeting. Many of the conversations centered on the question of whether the United States is overproducing nephrologists and if so, how it should be addressed. Salsberg believes that by closely examining recent trends and developments and assessing the impact of alternative scenarios the research can help stakeholders make more informed decisions.

Challenges for the future generation

GWU's next report on nephrology fellows, including data from its 2014 fellow survey, was scheduled to be published in December 2014 as of press time. Its release comes after the disappointing AY2015–2016 National Residency Match Program (NRMP) Specialties Matching Service (SMS) nephrology Match. Half of nephrology training programs and nearly a third of nephrology fellowship positions went unfilled. This represented a 6 percent and 24 percent increase in just one year.

"The results of the NRMP specialty match for the 2015 appointment year were discouraging," Salsberg said. "It may be that the number of new nephrology fellows has increased more rapidly than the demand for new nephrologists."

"It would appear that the changing delivery system and the bump up in the number of nephrology fellows being trained each year has contributed to a soft job market nationally," Salsberg noted. "However, it is important to do additional research to assess the possibility of regional or local shortages at the same time we have more than enough in other areas. Similarly, we need to look at the subspecialty areas in nephrology to better understand if supply/demand is different for different subspecialty areas."

At the same time as the nephrology Match results were released, a new modeling analysis by the Centers for Disease Control and Prevention determined that Americans have a high lifetime risk for CKD and that its prevalence will continue to increase (2).

The dismal Match results and other challenges nephrology faces are in no way unique to the specialty. "Many other specialties have faced similar issues," Salsberg told *ASN Kidney News*. "One of the better known examples is the case of anesthesiology in the early 1990s. When reports came out that new anesthesiologists couldn't find jobs, the number of U.S. medical school graduates (USMGs) applying to enter the specialty dropped by more than half over about three years. Some programs closed, others cut back. After several years of lower production, demand rose and anesthesiology again began to attract a very high percentage of USMGs."

The goal of our research is not to find "the answer" but to provide the nephrology community with better data and information so that they can make better, more informed decisions.

ASN Nephrology Match Task Force

The AY2015–2016 Match results prompted the ASN Council to form the Nephrology Match Task Force. The Task Force will be comprised of Councilors, nephrology fellowship training program directors, division chiefs, ASN Workforce Committee members, and other key leaders and stakeholders.

The Task Force will need to quickly assess the future viability of the Match, identify ways to ensure the Match's integrity, and attempt to clarify the ideal number of offered fellowship positions (based on recent estimates of the demand for nephrologists throughout the United States).

"While there is no authority to decide who should reduce fellowship positions if that was decided to be a wise course, the specialty should try to identify the values and goals of training that are important to assuring the nation access to high quality kidney care," Salsberg said.

By the spring of 2015, ASN and the academic nephrology community will need to decide whether the specialty will continue in NRMP SMS Match. As of press time, the Task Force members and its charge weren't available, but are expected to be announced shortly.

For 2015 the GWU researchers will expand their focus to examine the care delivery system, geographical distribution of nephrologists, and training programs, among other topics. Current and future GWU reports, as well as ASN's brief analysis of the AY2015–2016 NRMP SMS nephrology Match are available at http://www.asn-online.org/education/training/workforce/.

Reference

1. Salsberg E, et al. *The US Nephrology Workforce: Developments and Trends*. Washington, DC: American Society of Nephrology; 2014.
2. Hoerger TJ, et al. The future burden of CKD in the United States: A simulation model for the CDC CKD Initiative. *Am J Kidney Dis* 2014, in press. doi: http://dx.doi.org/10.1053/j.ajkd.2014.09.023.

Personalized Medicine Program Gets Green Light

Suppose you're seeing a new patient with kidney disease, high blood pressure, and high cholesterol. What if you could order a single lab test that would assess all known gene variants that might affect his response to common drugs—not just medications he's currently taking, but also common drugs that may be prescribed in the future? That's the approach being studied by The University of Chicago's Center for Personalized Therapeutics and other centers nationwide.

The goal is to develop a "medical system model" to overcome barriers to personalized medicine, incorporating patient-specific pharmacogenomic results into everyday patient consultations. The model is being tested now in the Center's ongoing "1200 Patients Project" (ClinicalTrials.gov no NCT01280825). Peter H. O'Donnell, MD, is principal investigator.

The 1200 Patients Project is designed to perform "broad, preemptive pharmacogenomic testing" for a large number of germline polymorphisms with known effects on drug responsiveness or toxicity. The test, performed in a Clinical Laboratory Improvement Amendments (CLIA) setting, reports on genes affecting widely used medications including aspirin, hydrochlorothiazide, various classes of blood pressure-lowering drugs, statins, and warfarin. The cost of testing is less than $500 per patient—about the same as for most individual CLIA genotype tests.

An important part of the model is delivery of the results to physicians via an interactive Web portal, or "genomic prescribing system" (GPS). The GPS presents results in a color-coded traffic light system: green means a favorable result, yellow means caution, and red means high risk. Physicians can also access further information and a patient-specific interpretation of the test results, for a "virtual pharmacogenomic consult."

The 1200 Patients Project has been launched to evaluate the feasibility and utility of incorporating a preemptive pharmacogenomic testing approach into routine medical care. Eligible patients were receiving routine care or treatment for conditions such as heart disease, inflammatory bowel disease, autoimmune disease, or others. All were regularly taking at least one, but no more than six, prescription drugs, with a life expectancy of at least three years.

Last year, O'Donnell and colleagues published results from the first year of the 1200 Patients Project in a special issue of *American Journal of Medical Genetics*. At that time, 812 patients had participated and 608 had been successfully genotyped. Of 268 clinic encounters at which genotyping results were available, participating study physicians accessed the GPS in 230 visits.

A total of 367 result signals were delivered via the GPS. Green lights accounted for 57 percent of results, yellow lights for 41 percent, and red lights for 1.4 percent. In 100 percent of the high-risk red light alerts, physicians clicked through to access the clinical details. They also clicked on 72 percent of yellow lights, as well as 20 percent of red lights.

The information delivered via the GPS was routinely used in consultations, and patient interest in being tested was "nearly ubiquitous." O'Donnell and coauthors write, "We demonstrated that delivered pharmacogenomic alerts had widespread applicability to our patient population and to the drugs they are routinely prescribed." At the time of the report, the investigators were accruing about 30 patients per month, with increased participation expected over time.

So far, the results demonstrate the successful implementation of preemptive pharmacogenomic testing in a program that is appreciated by physicians and patients and routinely used in clinical care. Of course, the ultimate goal will be to determine how preemptive testing and pharmacogenomic decision support will affect key clinical outcomes—including high-risk prescriptions, adverse events, and nonreponse to prescription drug therapy.

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Successful Ebola Treatment Spawns Guidelines

By Eric Seaborg

Although last fall's anxiety about the spread of the Ebola epidemic has receded, the outbreak continues in Africa. The possibility that U.S. hospitals will be treating more Ebola virus disease (EVD) cases cannot be discounted, and advance preparation is the key to coping with any infectious disease.

EVD treatment calls for special protocols—one in particular is the need to perform renal replacement therapy (RRT) in a biocontainment room. Several guidelines and resources have already appeared, including a proposal in an article, "Successful Delivery of RRT in Ebola Virus Disease," in the *Journal of the American Society of Nephrology*. The proposed guidelines are based on the successful experience at Emory University Hospital in treating the first documented case of RRT in a patient with EVD.

AKI is common in EVD patients. According to a "Frequently Asked Questions" resource posted on the ASN website: "In general, medical indications to initiate dialysis in patients with EVD will be similar to other patients with AKI and will involve considerations such as volume control, electrolyte [balance], acid-base balance, and severity of kidney dysfunction."

An overriding concern while treating such a highly infectious disease is to avoid exposure of healthcare workers and the public, so the *JASN* article recommendations focus on tailoring dialysis procedures for an isolation unit.

The guideline recommends using CRRT, with the possibility of changing to prolonged intermittent RRT using the same equipment.

Traffic in and out of the isolation unit needs to be minimized, so the treatment should be provided by "volunteer ICU nurses with specialized training in isolation protocols and in CRRT," rather than specialty dialysis nurses.

In keeping with Kidney Disease Improving Global Outcomes (KDIGO) recommendations, the right internal jugular vein is the preferred access site because it presents the lowest bleeding risk. A temporary nontunneled dialysis catheter should be placed under direct ultrasound visualization with an x-ray to confirm correct placement. A femoral access site should be used only when x-ray imaging to confirm placement is not available in the isolation unit.

The CRRT dosing should be consistent with KDIGO recommendations, such as a target to deliver "a total effluent dose of 20–25 mL/kg per hour unless higher dosing is needed to augment small solute and electrolyte clearance or correction of acidemia."

Although the CRRT effluent has a very low infectious risk, considering the environment where it is produced, it should be treated as hazardous waste and disposed of in keeping with institutional and local requirements.

The patient also needs to receive augmented nutritional support while receiving CRRT.

Because EVD is a hemorrhagic disease, the use of anticoagulation is a sensitive issue. The article recommends the use of regional citrate anticoagulation (RCA) to extend filter life and reduce the potential staff exposures due to filter exchanges.

Sarah Faubel, MD, professor of medicine at the University of Colorado, Denver, and head of ASN's AKI Advisory Group, said that RCA worked well in the Emory case, but is not required to provide CRRT to an EVD patient. RCA is not available in some centers and others may not want to use it because it requires frequent calcium monitoring, so the ASN guideline says a no anti-coagulation approach is possible using other measures to prolong filter life, including increasing blood flow rate and using prefilter replacement fluid for hemodilution.

With this caveat, Faubel expressed support for the article's approach, as well as that of the ASN resource (http://www.asn-online.org/news/2014/1017-ebola.aspx guidelines) and Centers for Disease Control and Prevention recommendations (http://www.cdc.gov/vhf/ebola/hcp/guidance-dialysis.html).

Whatever the specifics of the protocol, the objective in treating an EVD patient is to provide supportive care until the patient's body responds and fights off the infection.

A New Treatment for Hyperkalemia at Last?

In new trials, ZS-9 looks safe and effective for outpatient potassium reduction

Nephrologists have been waiting decades for a safe and effective new option to lower potassium in patients with hyperkalemia. Now, two new randomized controlled trials have reported highly encouraging results with a new selective cation exchanger, sodium zirconium cyclosilicate (ZS-9), as an outpatient treatment for hyperkalemia.

"We found that treatment with ZS-9 normalized potassium within 24 hours in the vast majority of patients with hyperkalemia, and maintained normal potassium levels through four weeks of outpatient treatment," said Edgar Lerma, MD, of University of Illinois Chicago/Advocate Christ Medical Center. Lerma was one of the authors of the HARMONIZE (HyperkAlemia RandoMized interventiON multI-dose ZS-9 maintEnance) trial, which was simultaneously presented at the American Heart Association Scientific Sessions and published in the *Journal of the American Heart Association* in November.

Two pivotal trials of new hyperkalemia therapy

The HARMONIZE trial, or ZS-004, was released the same week as the preceding ZS-003 trial, which was published in the *New England Journal of Medicine*. Collectively, the two trials evaluated more than 1000 patients with hyperkalemia, according to Mikhail Kosiborod, MD, a cardiologist at Saint Luke's Mid America Heart Institute in Kansas City, MO, and lead author of HARMONIZE. "Current treatments of hyperkalemia have significant shortcomings," said Kosiborod. "Together, the results of these new studies indicate that ZS-9 is highly efficacious in rapidly reducing potassium levels and maintaining normokalemia for up to four weeks."

Added Kosiborod: "These results have the potential to shift the current paradigm for how hyperkalemia is managed among various at-risk patient groups." Both trials were sponsored by ZS Pharma, Inc.

The multicenter HARMONIZE trial included 258 outpatients with hyperkalemia, defined as a baseline potassium level of 5.1 mEq/L or higher. In an initial open-label phase, all patients were treated with oral ZS-9: 10 g three times daily.

The response was dramatic, with 237 patients reaching normal potassium levels of 3.5 to 5.0 mEq/L. Potassium dropped significantly within 1 hour after the first dose of ZS-9. The median time to normokalemia was 2.2 hours, with 84 percent of patients reaching normal levels by 24 hours and 98 percent by 48 hours.

The 237 responders were then randomly assigned to 28 days of treatment with ZS-9, at a dose of 5, 10, or 15 g per day, or placebo. During treatment, potassium levels were 4.8, 4.5, and 4.4 mEq/L, respectively, in the active treatment groups, compared with 5.1 mEq/L with placebo.

Potassium levels remained in the normal range in 80 percent of patients receiving the 5-g dose, 90 percent of those receiving the 10-g dose, and 94 percent of those receiving the 15-g dose of ZS-9, compared with 46 percent of the placebo group during the randomized phase. Adverse events were similar between groups, although the rate of edema was numerically higher with the 15-g dose of ZS-9. The rate of gastrointestinal adverse events was numerically lower in patients receiving ZS-9, compared with placebo.

Hypokalemia occurred in about 10 percent of patients receiving the 10-g and 15-g doses, compared with none of those taking ZS-9 5 mg or placebo. "All cases of hypokalemia were mild and responded to protocol-directed dose reduction," said Lerma. "Thus we have a product that consistently lowered potassium across all patient subgroups, with excellent tolerability similar to placebo."

The ZS-003 trial, a separate and larger trial, in which the primary endpoint was focused on the short-term 48-hour efficacy of ZS-9 compared with placebo, showed comparable 48-hour reductions in potassium levels with ZS-9 among 753 patients with hyperkalemia. The lead author was David K. Packham, MB, BS, MD, of

the Melbourne Renal Research Group.

ZS-003 also showed good maintenance of normokalemia during 14 days of maintenance therapy with ZS-9, at doses of 5 and 10 g. Again, adverse events were similar in the ZS-9 and placebo groups, with only two cases of mild hypokalemia. In both trials, the reductions in serum potassium were greatest in patients with the highest baseline.

Complementary results on acute and chronic efficacy

Kosiborod noted that the two studies—including more than 1000 patients combined—provide complementary information on the efficacy of ZS-9 for hyperkalemia treatment. ZS-003, the larger of the two trials, was specifically designed to evaluate the efficacy of ZS-9 in lowering potassium during the induction phase compared with placebo.

"The ZS-9 results showed statistically significant and clinically meaningful reductions in serum potassium during the induction phase in patients receiving 2.5, 5, or 10 g of ZS-9 three times daily," Kosiborod said. "Ninety-nine percent of subjects became normokalemic after receiving 10 g of ZS-9 thrice daily for 48 hours." The reductions achieved in the short-term phase were maintained for as long as 14 days when 5 g or 10 g of ZS-9 was administered once daily. "These results were statistically significant when compared to patients randomized back to placebo, who reverted to hyperkalemia."

The subsequent HARMONIZE study was designed to evaluate the extended efficacy of ZS-9 for as long as four weeks in maintaining normokalemia, compared with placebo. "All three doses of once-daily ZS-9 (5, 10, and 15 g) met the primary endpoint, producing lower potassium levels and a higher proportion of patients with normal potassium levels for up to 28 days compared with placebo," said Kosiborod. He noted that the 5-g and 10-g dose groups, which overlapped between ZS-003 and HARMONIZE, showed "very similar, consistent efficacy" between studies.

Inasmuch as the short-term efficacy of ZS-9, compared with placebo, was already clearly demonstrated in ZS-003, HARMONIZE had an open-label, rather than a randomized, induction phase. "This also allowed inclusion of patients with higher potassium levels at baseline," said Kosiborod. The mean baseline potassium level was 5.3 mEq/L in ZS-003, compared with 5.6 mEq/L—and

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Hyperkalemia

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in some cases as high as 7.2 mEq/L—in HARMONIZE.

Nephrologists don't need to be told that progress toward the development of a safe and effective new treatment for hyperkalemia is welcome news. Currently, the main option for treatment of hyperkalemia is sodium polystyrene sulfonate (SPS), also known as kayexalate. Approved before the passage of the Kefauver-Harris Drug Amendments in 1958, SPS is a "grandfathered" drug that to this day has shown little or no evidence of efficacy in reducing potassium levels. Subsequent safety concerns have included uncommon cases of colonic necrosis linked to a widely used preparation of SPS plus sorbitol.

A landmark 50-year review by Richard Sterns, MD, of the University of Rochester, published in the *Journal of the American Society of Nephrology* in 2010, questioned whether SPS would have ever been approved under the current U.S. Food and Drug Administration (FDA) standards. Another study published in the *American Journal of Medicine* in 2013 noted the association between SPS, with or without sorbitol, and gastrointestinal injury. "Since the publication of these articles and other case reports, I have limited use of SPS to extreme circumstances in my clinical practice, particularly because of concerns about gastrointestinal adverse events, such as colonic necrosis," Lerma said .

Hyperkalemia is a common disorder, which carries a risk of life-threatening cardiac arrhythmias and other adverse outcomes. It is commonly seen in patients with chronic kidney disease, heart failure, and diabetes mellitus. The same conditions are important indications for renin-angiotensin-aldosterone system (RAAS) inhibitors, for which elevated potassium levels are a side effect.

Clinicians may hesitate to prescribe RAAS inhibitors for patients with appropriate indications because of the risk of hyperkalemia, Lerma said. "That's part of the reason for the excitement over the emerging evidence on ZS-9," he added. "By giving us an effective and safe option for lowering potassium levels, it may help us extend the use of effective treatments for CKD and heart failure."

The HARMONIZE authors noted some important limitations of their study. It excluded some groups in need of potassium-lowering therapy, including patients receiving dialysis—although they said many patients in their study had stage 4 or 5 chronic kidney disease. Hospitalized patients and those with arrhythmias were also excluded. Further studies are needed to address these groups and to assess the longer-term efficacy and safety of ZS-9. Long-term outcome studies are ongoing; submission to the FDA is planned during the first half of 2015.

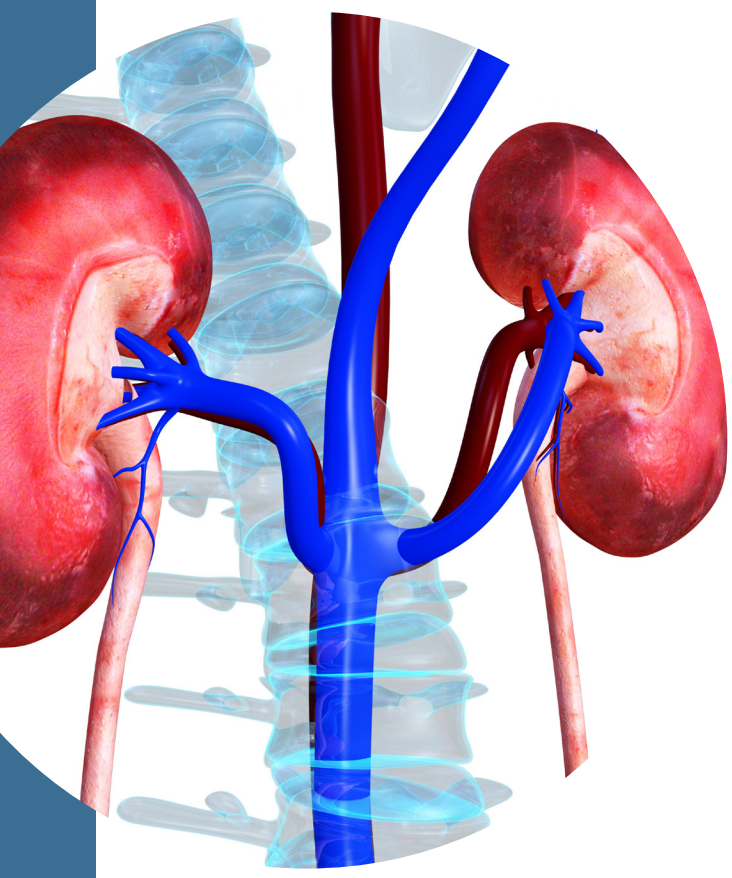
Csaba P. Kovesdy, MD, a nephrologist at The University of Tennessee Health Science Center, noted that with modern standards for demonstrating drug efficacy and safety, the supporting data on ZS-9 will be stronger than for previous hyperkalemia treatments. "That will allow us to use it with much greater comfort in patients under various circumstances," he commented. "That stands both for acute treatment and—most importantly for me as a practicing nephrologist—as a means of managing chronic hyperkalemia."

While the four-week biochemical results are encouraging, "one would want to learn if similar efficacy is being maintained if patients are taking this for much longer periods—months and years," Kovesdy said. "And this will principally come from what we learn in clinical practice." He noted that with differences in patient selection and adherence, effectiveness in clinical practice may be less than in research trials. Clinical experience will also provide critical information on the safety of ZS-9. "Even though in these relatively short-term studies, the safety profile seems to be adequate, there are rare complications, hypothetically, which may only come to light if much larger numbers of patients take the medication for much longer periods of time."

And of course, the bottom line is whether ZS-9 and other treatments under development can improve patient outcomes. "I am hopeful that the companies developing these new drugs will invest in further trials, to see if control of hyperkalemia leads to a reduction in sudden cardiac events, for example."Kovesdy said. "Such studies would also tell us if the use of these medications allows a more liberal and broader use of RAAS inhibitors, which consequently could result in better cardiovascular outcomes."

The Declaration of Istanbul and its Global Impact on Organ Transplantation

By Francis L. Delmonico



In 2004, prompted by an increase in organ trafficking and the advent of transplant tourism, the World Health Assembly urged United Nations member states to implement national oversight of organ transplantation to protect poor and vulnerable individuals from being coerced into selling their organs. Four years later, more than 150 professionals from 78 countries and a variety of backgrounds and religious traditions gathered in Istanbul, Turkey, to address the rampant global problem of organ trafficking and transplant tourism. The situation had deteriorated to the point that transplant tourists were departing and going to the United States.

Convened by The Transplantation Society (TTS) and the International Society of Nephrology (ISN) the conference participants drafted the Declaration of Istanbul on Organ Trafficking and Transplant Tourism, which was simultaneously published in several medical journals including the official journals of the TTS, ISN, and the American Society of Nephrology (ASN), and distributed electronically as a *Lancet* web appendix.

The *Declaration* consists of: 1) clear definitions of organ trafficking, transplant commercialism, and transplant tourism; 2) a set of principles to guide professional conduct and government policy; and 3) a series of proposals applying those principles to particular problems in transplantation. In addition, the Declaration was a forerunner of the corresponding World Health Organization (WHO) Guiding Principles adopted by the 63rd World Health Assembly in 2010.

Since its release, the Declaration's principles have been spread across the world by the Declaration of Istanbul Custodian Group (DICG)—an assembly of dedicated professionals from across the globe. The DICG's current mission is to promote ethical practices of organ donation and transplantation, so that national self-sufficiency can be achieved and transplant tourism and organ trafficking curtailed.

Much has been accomplished since the Declaration was released. Starting in 2008, the DICG targeted governmental authorities to align national policies with the Declaration and the WHO Guiding Principles. The DICG has achieved success in India, Pakistan, the Philippines, Eastern Europe, Latin America, China, as well as the United States.

For example, China has agreed to change its policy of using organs from executed prisoners, although this remains a work in progress. The DICG leadership unraveled transplant tourism in Costa Rica and have worked to protect Central America from this menace. The Council of Europe engaged DICG to support the development of a convention prohibiting organ trafficking. A fundamental WHO Guiding Principle to achieve transparency of transplantation activity has been adopted by the United Network for Organ Sharing (UNOS). UNOS will now collect data on candidates who are neither U.S. citizens nor residents who have travelled to the United States for the purpose of transplantation.

Yet more must be done in the United States to address the plight of those waiting for kidney transplants. As a first step, removing the considerable financial disincentives and obstacles to organ donation, rather than eliminating the federal ban on payment to donors, would be something the entire community could enthusiastically support. These expenses include the costs of being evaluated as a potential donor, of transportation, dependent care, and lost wages during the period from predonation screening to postoperative recovery. Insurance against the risks of donation should also be provided. Medical complications that may not be covered by the donor's health insurance should be paid for. In addition, the death of a donor without life insurance and loss of financial support would be disastrous for any family. This cost coverage would ultimately reduce the cost to health insurance companies and the federal government because enabling patients to undergo kidney transplantation would not only extend and improve their lives but also save the cost of dialysis.

A second step would be to eliminate the 3-year limitation on Medicare coverage of the immunosuppressive medications that are essential to prevent organ rejection. This shortsighted policy has resulted in hundreds of patients losing their transplanted kidneys, necessitating a return to dialysis while they await another transplant.

A third step would be to increase the supply of organs from deceased donors. About 500 kidneys are recovered from deceased donors each year in the United States and discarded even though they are medically suitable for transplantation. Moreover, efforts must be undertaken to continue developing the practice of donation after circulatory death.

The highly successful kidney paired donation programs should be made available to all recipients with biologically incompatible living donors.

The DICG greatly values the support of the ASN and the kidney community. Continued cooperation is sought to serve our patients not only in North America, but throughout the world.

The Declaration of Istanbul's website provides information on organ trafficking, and the DICG welcomes the interest of professionals and stakeholder members of society to visit at www.declarationofistanbul.org

Francis L. Delmonico, MD, is the Executive Director of the Declaration of Istanbul Custodian Group. He is also the Medical Director of the New England Organ Bank and affiliated with the Harvard Medical School and Massachusetts General Hospital in Boston, MA.

Journal View

Cholecalciferol Repletion Improves Vitamin D Status in Hemodialysis Patients

Physiologic doses of cholecalciferol enable most hemodialysis patients to achieve recommended levels of vitamin D and other biochemical measures, reports a trial in the *American Journal of Kidney Diseases*.

The VitaDial study included 55 adult patients receiving maintenance dialysis whose 25-hydroxyvitamin D3 levels were less than 30 ng/mL, enrolled at two Belgian centers. In an initial randomized phase, patients were assigned to receive 13 weeks of oral cholecalciferol, 25,000 IU per week, or placebo. This was followed by a 26-week open-label phase, in which patients received individually prescribed cholecalciferol, based on National Kidney Foundation Kidney Disease Outcomes Quality Initiative guidelines. The main outcome of interest was the percentage of patients with 25(OH)D levels of 30 ng/mL or higher at the end of the randomized phase.

At 13 weeks, 61.5 percent of patients in the cholecalciferol group had 25(OH)D levels of 30 ng/mL or higher, compared with just 7.4 percent of the placebo group. Cholecalciferol was also associated with higher levels of 1,25-dihydroxyvitamin D3 (1,25[OH]2D), 22.5 versus 11 pg/mL; and a higher likelihood of normal calcium levels, 76.9 versus 48.2 percent.

There was no significant difference in hypercalcemia incidence or in levels of phosphate and intact parathyroid hormone. Among patients from the placebo group, open-label treatment did not alter the percentage reaching the 25(OH)D target level.

Current guidelines recommend a 25(OH)D level above 30 ng/mL in patients receiving maintenance hemodialysis, but they do not address how to achieve that target. The new study finds that 13 weeks of once-weekly oral cholecalciferol is an "effective, safe, inexpensive, and manageable" approach to increasing 25(OH)D and $1,25(OH)_2D$ levels. The authors note that although their study did not address hard clinical endpoints, it found lower rates of falls and fractures in the cholecalciferol group [Massart A, et al. Biochemical parameters after cholecalciferol repletion in hemodialysis: results from the VitaDial randomized trial. *Am J Kidney Dis* 2014; 64:696–705].

For First Few Years, Better Survival with Peritoneal Dialysis than Hemodialysis

Among patients with similar characteristics, those starting peritoneal dialysis (PD) have higher survival through the first 2 or 3 years than do those starting hemodialysis (HD), reports a study in *Kidney International*.

Using their managed care system's ESRD registry, the researchers identified 11,301 patients who were beginning PD or HD. From this group, 1003 propensity-matched pairs of incident PD and HD patients were identified. Eligible HD patients received appropriate predialysis care, including permanent dialysis access placement. Survival was compared by intention-to-treat and as-treated analyses.

The 1-year adjusted survival was 95 percent in the PD group versus 89 percent in the HD group; the 2-year survival was 87 percent versus 83 percent, respectively. The 1-year cumulative hazard ratio for death among incident HD patients, compared with PD, was 2.38 on intention-to-treat analysis and 2.10 on as-treated analysis.

The risk of death remained lower with PD through close to 3 years on as-treated analysis and nearly 2 years on intention-to-treat analysis. There was no significant difference in mortality on longer follow-up.

Studies comparing survival in incident HD and PD patients have reported conflicting results. Reports of improved survival in patients beginning PD might reflect the effects of early central venous catheter use or other potential confounders.

This new propensity-matched analysis finds a significant survival advantage with PD over the first 2 or 3 years. In the first year, the cumulative risk of death is more than twice as high with HD. The authors suggest that ongoing improvements in the treatment of PD patients and avoidance of metabolic complications might lead to a longer duration of survival benefit [Kumar VA, et al. Survival of propensity matched incident peritoneal and hemodialysis patients in a United States health care system. *Kidney Int* 2014; 86:1016–1022].

Ultrasound vs. CT as Initial Test for Kidney Stones

For patients with suspected nephrolithiasis, clinical outcomes are similar when ultrasonography or computed tomography (CT) is used as the initial imaging test, according to a "real-world" trial published in the *New England Journal of Medicine*.

The pragmatic comparative effectiveness study included 2759 patients with suspected nephrolithiasis, seen at 15 diverse academic emergency departments. Patients were randomly assigned to initial evaluation with point-of-care ultrasonography, performed by an emergency physician; radiology ultrasonography, performed by a radiologist; or abdominal CT. All other clinical decisions, including orders for additional imaging tests, were made by the treating physician.

At 30 days, the rates of high-risk diagnoses with complications potentially related to missed or delayed diagnosis were compared between groups. Other outcomes of interest included 6-month cumulative radiation exposure and adverse events. At least one follow-up visit was available for 2646 patients.

Just 11 patients had high-risk diagnoses with complications within 30 days: a rate of 0.4 percent, with no significant difference by initial imaging test. In five of these patients, the final diagnosis was pyelonephritis, urosepsis, and bacteremia. Both ultrasound groups had lower 6-month cumulative radiation exposure compared with the CT group.

The rates of serious adverse events were similar among groups: between 11 and 12 percent. Just 0.4 percent of patients had serious adverse events related to study participation. The pain scores and rates of return emergency visits or hospitalization were similar between groups. Diagnostic accuracy was 34.5 percent with point-of-care ultrasonography, 31.2 percent with radiology ultrasonography, and 32.7 percent with CT.

Abdominal CT has high sensitivity in the evaluation of suspected kidney stones. However, it has drawbacks, including high costs, radiation exposure, and a high rate of incidental findings.

Ultrasonography is a good alternative for evaluation of suspected nephrolithiasis in everyday clinical practice, the new trial suggests. Although it cannot match the sensitivity of CT, it offers comparable accuracy, with lower cumulative radiation exposure and no increase in high-risk diagnoses with complications. The authors believe that an initial ultrasound strategy can avoid the need for CT in most patients [Smith-Bindman R, et al. Ultrasonography versus computed tomography for suspected nephrolithiasis. *N Engl J Med* 2014; 371:1100–1110].

Added to ACEIs/ARBs, Co-trimoxazole Linked to Sudden Death

Co-trimoxazole is linked to an increased risk of sudden death among older patients taking an angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB), according to a report in the *British Medical Journal*.

Using Ontario health data, the researchers identified patients aged 66 years or older who were taking an ACEI or ARB between 1994 and 2012. Patients who died suddenly within a week after being prescribed any of five antibiotics commonly used to treat urinary tract infections—co-trimoxazole, ciprofloxacin, norfloxacin, nitrofurantoin, or amoxicillin—were analyzed as cases.

For each case patient, up to four control individuals were identified, matched for age, sex, chronic kidney disease, and diabetes. With amoxicillin as the reference, specific antibiotics were examined for association with sudden death, adjustment being made for other predictors.

The researchers matched 1027 case patients with sudden death after antibiotic prescription to 3733 control individuals. Analysis showed a significant association between co-trimoxazole and sudden death: adjusted odds ratio (OR) 1.38, compared with amoxicillin. The increase in sudden death was somewhat higher at 14 days. At that time, the excess risk associated with co-trimoxazole was about three sudden deaths per 1000 patients.

Ciprofloxacin, previously linked to QT interval prolongation, was also associated with an increased risk of sudden death: OR 1.29. There was no association for nitrofurantoin or norfloxacin.

Renin-angiotensin system inhibitors are associated with increased hyperkalemia risk, and co-trimoxazole has also been linked to increased potassium levels. The authors previously reported an increase in hyperkalemia-related hospitalization in patients prescribed co-trimoxazole along with an ACEI or ARB.

The new study finds an increased risk of sudden death for ACEI or ARB users after receiving a prescription for co-trimoxazole. This risk may reflect co-trimoxazole–induced hyperkalemia in a vulnerable group of patients, the researchers said. They suggest considering alternative antibiotics in patients taking an ACEI or ARB, or close monitoring of serum potassium if co-trimoxazole is prescribed [Fralick M, et al. Co-trimoxazole and sudden death in patients receiving inhibitors of renin-angiotensin system: population based study. *BMJ* 2014; 349:g6196].

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